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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/817,038	04/02/2004	Isaac Farr	200316298-1	2249

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HEWLETT PACKARD COMPANY  
P O BOX 272400, 3404 E. HARMONY ROAD  
INTELLECTUAL PROPERTY ADMINISTRATION  
FORT COLLINS, CO 80527-2400

EXAMINER
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BERMAN, SUSAN W

ART UNIT	PAPER NUMBER
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1711

MAIL DATE	DELIVERY MODE
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09/10/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

**Application No.**

10/817,038

**Applicant(s)**

FARR ET AL.

**Examiner**

/Susan W. Berman/

**Art Unit**

1711

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 03 August 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_.

***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 08-03-2007 has been entered.

***Terminal Disclaimer***

The terminal disclaimer filed on 06-04-2007 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of US Patent 6,742,456 has been reviewed and is accepted. The terminal disclaimer has been recorded.

The rejection of claims 1-11 on the ground of nonstatutory obviousness-type double patenting is overcome by the filing of the terminal disclaimer.

***Response to Amendment***

The rejection of claims as being anticipated by Kasperchik et al has been withdrawn. New grounds of rejection under 35 USC 103(a) over Kasperchik et al are set forth herein below.

***Response to Arguments***

Applicant's arguments filed 08-03-2007 have been fully considered but they are not persuasive. Kasperchik et al clearly teach that one or more acidic components may be employed and teach acidic components not containing unsaturation as well as acidic components

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containing unsaturation, such as monoacrylate acid derivatives, for use in the disclosed compositions.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 1 recites that a polymerization reaction occurs between the monoacrylate component and the light sensitive initiator. However, what is disclosed in the specification and known in the art is that the light sensitive initiator is activated by exposure to light to form free radicals that initiate polymerization of the monoacrylate to form a polymer, not to initiate polymerization between the initiator and the monoacrylate. No polymerizable initiators are disclosed in the instant specification. See page 7, line 31, to page 8, line 4, and page 12, line 11, to page 12, line 10. The claims do not clearly recite that the monoacrylate is polymerized in the presence of a light sensitive initiator.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are

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such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kasperchik et al (6,742,456). Kasperchik et al disclose systems for rapid prototyping comprising a basic component, an acidic component and a polar binder that stimulates a crosslinking reaction between the acidic and basic components. Kasperchik et al teach that one or more acidic components can be used (column 3, lines 42-48). An embodiment wherein the acid component is substituted with unsaturated polymerizable acidic moieties and a polymerization initiator is present is taught (column 4, line 48, to column 5, line 52). (Meth)acrylates are preferred polymerizable groups. A photoinitiator, such as a mixture of  $\alpha$ -diketones and tertiary amines, is taught in column 5, lines 38-52. The disclosed surfactant/wetting agents to facilitate wetting correspond to surface tension modifiers in the instant claims. Tergitols are disclosed in the Examples. Compounds corresponding to the instantly claimed viscosity modifiers, such as 2-pyrrolidone, polyethylene glycol are also taught in the Examples.

It would have been obvious to one skilled in the art at the time of the invention to employ more than one acidic component, such as one of the acids taught in column 3, line 42, to column 4, line 48, and a monoacrylate unsaturated acid as taught in column 5, lines 26-38. Kasperchik et al provide motivation by teaching that the presence of polymerizable unsaturated acidic moieties is "highly desirable" to "further fortify" the cross-linked hydrogel by crosslinking of unsaturated moieties in addition to the acid-base crosslinking (column 4, lines 53-59). Furthermore, Kasperchik et al provide motivation to select a (meth)acrylate compound by teaching that (meth)acrylates are the preferred polymerizable groups. One skilled in the art at the time of the

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invention would have been motivated by a reasonable expectation of providing a highly crosslinked hydrogel, as taught by Kasperchik et al.

Claims 1-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over DE 101 58 233 A1 in view of Kasperchik et al (6,742,456). DE '233 discloses a reactive system for 3D printing comprising a polyacid and a polybase or an inorganic reactive component such as a metal oxide to which a "special reactive system" can be added. The special reactive system comprises radically polymerizable components, such as (meth)acrylates. The (meth)acrylates taught include those disclosed by applicant ([0088] to [0092]). See paragraphs [0026] to [0032], [0046] and [0084] to [0100]. The difference from the instantly claimed compositions is that DE '233 teaches using a redox catalyst including an alkyl ammonium persulfate or benzoyl peroxide oxidizing agent. DE '233 does not mention a light sensitive initiator.

The disclosure of Kasperchik et al is discussed herein above. Kasperchik et al teach that an analogous reactive system can be initiated by a light initiator or a heat-triggered initiator, such as benzoyl peroxide or ammonium persulfate.

It would have been obvious to one skilled in the art at the time of the invention to substitute the light initiator taught by Kasperchik et al for the redox initiator in the analogous reactive systems taught by DE '233. DE '233 teaches that the redox system generates free radicals for initiating polymerization of the ethylenically unsaturated component. Kasperchik et al teach that free radicals can be generated by either a light sensitive initiator or by an organic peroxide. One skilled in the art at the time of the invention would have been motivated by a reasonable expectation of curing the composition disclosed by DE '2333 by exposure to light in

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the presence of a light sensitive initiator, as taught by Kasperchik et al in analogous compositions.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to /Susan W. Berman/ whose telephone number is 571 272 1067. The examiner can normally be reached on M-F 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on 571 272 1078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SB  
9/3/2007

/Susan W Berman/  
Primary Examiner  
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